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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/633,848	08/04/2003	Chang-Ho You	8836-194 (1B12195-US)	5667
7590 06/11/2004 F. CHAU & ASSOCIATES, LLP Suite 501 1900 Hempstead Turnpike East Meadow, NY 11554			EXAMINER MAI, SON LUU	
			ART UNIT 2818	PAPER NUMBER

DATE MAILED: 06/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/633,848

Applicant(s)

YOU, CHANG-HO

Examiner

Son L. Mai

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "second circuit" in claims 1, 8, 11, 18, 21 and 28 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.
3. Figures 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).
4. Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

5. The disclosure is objected to because of the following informalities:

On page 10, line 12, the description “the bit lines are charged to the high voltage Vpp” does not agree with the drawing in figure 7 that shows the selected bit line BLSs are charged to Data “1” and Data “0” while the non-selected bit line BLN is charged to Vdd. Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. Claims 1-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, the recitation “charging the bit lines to a second voltage level” in lines 8-9, is confusing because there are different bit lines charged to different voltage levels, that is non-selected bit lines BLN to Vdd, selected bit lines BLS(“1”) to Data “1” and selected bit lines BLS(“0”) to Data “0”. So, which ones is charged to a second voltage level? Claims 11 and 21 are rejected for reciting similar limitations to claim 1.

Regarding claim 4, the recitation “the second time is longer than the first time by a predetermined interval” is confusing. As understood from the specification and the drawings, the second time is the time “tp” and the first time is the time “t1”. These points of time do not have intervals. So, by comparing one point of time to another does not make sense. Claims 5, 10, 14, 15, 20, 24 and 25 are rejected for including similar limitations to claim 4.

Regarding claim 10, the recitation “the third voltage” in line 2, lacks antecedent basis in the claim.

Regarding claim 20, the recitation "the third voltage" in line 2, lacks antecedent basis in the claim.

Regarding claim 26, the recitation "the address information" in line 2, lacks antecedent basis in the claim.

Regarding claim 30, the limitation "the third circuit activates one of main precharge signals" in lines 1-2, is misdescriptive. Should it be "one of main precharge signals activates the third circuit" as described on page 6?

Claims 2-10, 12-20 and 22-30 are rejected for depending upon claims 1, 11 and 21, respectively.

Allowable Subject Matter

7. Claims 1-30 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.
8. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to teach or suggest a flash memory having three different circuits for charging non-selected bit lines and selected bit lines to different voltage levels at different times to avoid peak current due to voltage charging concentration.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Choi (U.S. Patent 6,028,788), Sano (U.S. Patent 6,195,297), Lee

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(U.S. Patent 6,480,419) and Jeong (U.S. Patent 6,650,566) disclose bit line charging circuits for charging bit lines in flash memory devices.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Son L. Mai whose telephone number is 571-272-1786. The examiner can normally be reached on 8am to 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on 571-272-1787. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

06-10-04



Son L. Mai
Primary Examiner
Art Unit 2818